ABSTRACT OF THE DISCLOSURE

A pivoting vane rotary compressor includes a housing having a generally pear-shaped chamber defined by an inner wall. A rotor is mounted within the chamber to define about the rotor a compression chamber, which narrows from a main chamber region to a constricted chamber region. A pair of reversible intake and exhaust ports are connected communicably with the chamber. Each port selectively and alternately introduces air into the chamber while the other port exhausts air from the chamber. At least one adjoining pair of curved vanes are pivotably attached to the rotor and extend in generally opposite arcuate directions from the rotor into the chamber. A motor is provided for rotatably driving the rotor alternately in opposing first and second directions such that both of the adjoining vanes are urged simultaneously against the inner wall of the chamber to define at least one compartment that transmits the air through the chamber between the pair of intake and exhaust ports and through the main chamber region. Air introduced through a selected one of the ports is compressed and discharged through the other port. A concentrator employing a pair of the compressors as well as two pairs of filters and crossover valves is also provided.